Staff Report and Comments
W.D. Beaty House
2400 Kendrick Drive
Charlotte, NC
Application for COA HLC395

Exhibits presented to and considered by the Commission:

Exhibit A – Project Description

1. New single family house at 2405 Kendrick Drive

Exhibit B – Map

Exhibit C – Project Plans

Based upon the information presented in the application, staff offers the following suggested findings of fact:

The HLC has acknowledged the need to alter or add to a historic property to meet continuing or new uses while retaining the property's historic character.

1. The proposed construction is on the subdivided parcel of the Beaty House property. The new house is a one story, single family ranch style house similar in character, setting and scale to adjacent original houses from the 1950s.
2. The proposed project meets the HLC Standard 1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
3. The proposed project meets the HLC Standard 2. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.

Staff suggests that the Commission approve the application as presented.

THE HLC STANDARDS

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. Alterations, new additions, and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Polaris 3G Map – Mecklenburg County, North Carolina

Exhibit B

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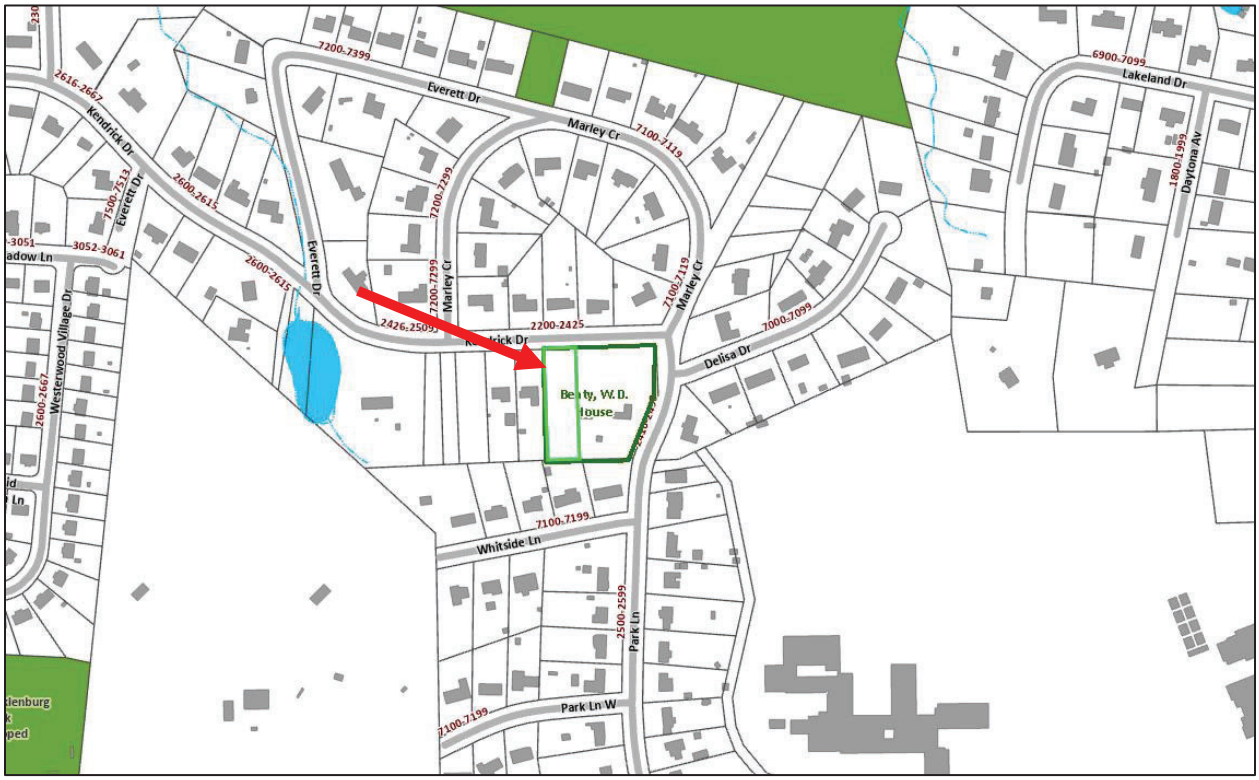

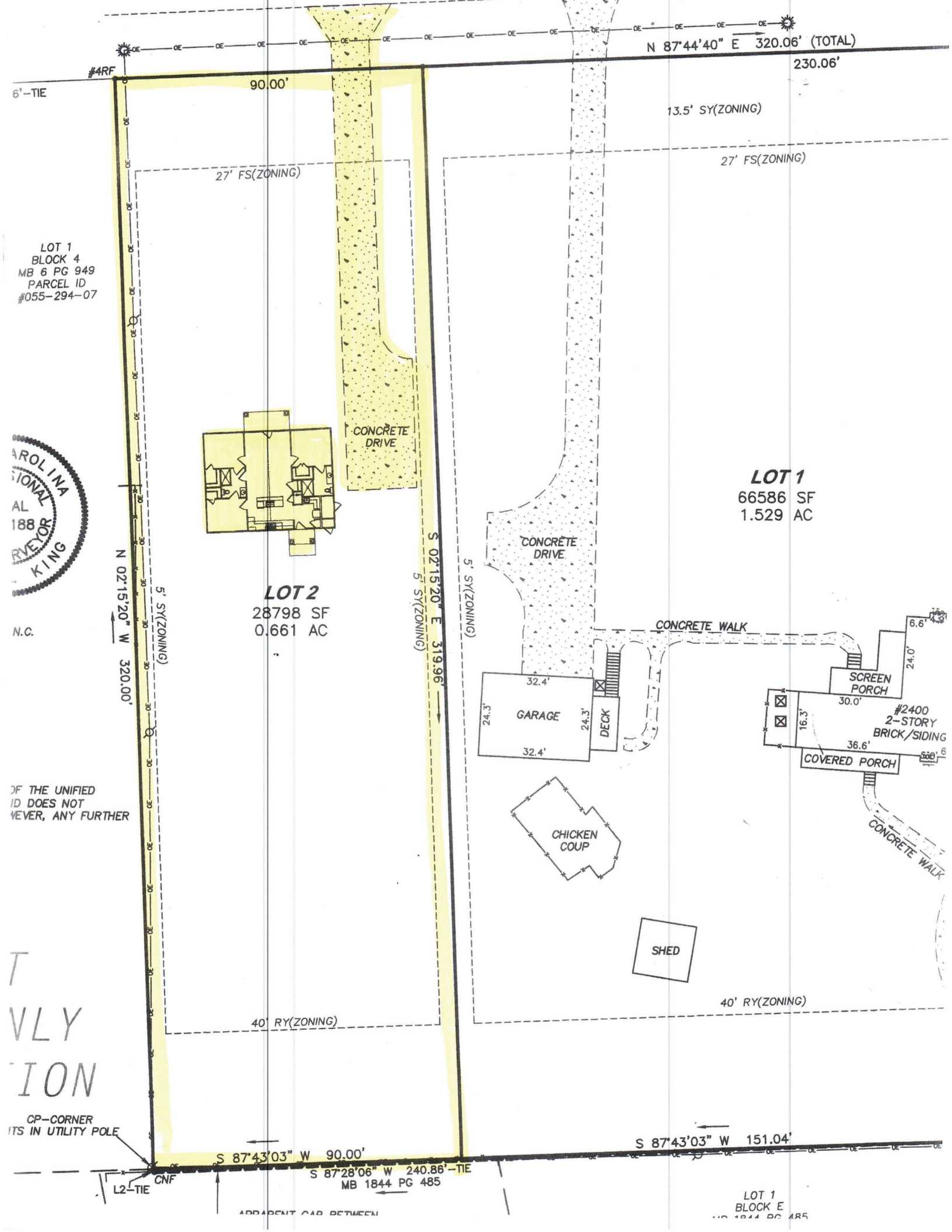
N 87°44'40" E 320.06' (TOTAL)
230.06'
#4RF
6'-TIE
90.00'
13.5' SY(ZONING)
27' FS(ZONING)
27' FS(ZONING)
LOT 1
BLOCK 4
MB 6 PG 949
PARCEL ID
#055-294-07
CONCRETE DRIVE
LOT 2
28798 SF
0.661 AC
N 02°15'20" W 320.00'
5' SY(ZONING)
S 02°15'20" E 319.96'
5' SY(ZONING)
5' SY(ZONING)
CONCRETE DRIVE
LOT 1
66586 SF
1.529 AC
CONCRETE WALK
32.4'
24.3'
GARAGE
24.3'
DECK
32.4'
6.6'
24.0'
SCREEN PORCH
30.0'
16.3'
#2400
2-STORY
BRICK/SIDING
36.6'
COVERED PORCH
CONCRETE WALK
CHICKEN COUP
SHED
40' RY(ZONING)
40' RY(ZONING)
N.C.
OF THE UNIFIED
ID DOES NOT
WEVER, ANY FURTHER
CP-CORNER
ITS IN UTILITY POLE
S 87°43'03" W 90.00'
S 87°43'03" W 151.04'
S 87°28'06" W 240.86'-TIE
MB 1844 PG 485
L2-TIE
CNF
LOT 1
BLOCK E

CLIMATE ZONES	FENESTRATION U-FACTOR[b,j]	SKYLIGHT[b] U-FACTOR	GLAZED FENESTRATION SHGC[b,k]	CEILING[m] R-VALUE	WOOD FRAMED WALL R-VALUE	MASS WALL R-VALUE[i]	FLOOR R-VALUE	BASEMENT[c,d] WALL R-VALUE	SLAB[d] R-VALUE AND DEPTH	CRAWL SPACE[c] WALL R-VALUE
3	0.35	0.55	0.30	38 or 30 cont	15 or 13 + 2.5[h]	5/13 or 5/10 cont	19	5/13[f]	0	5/13
4	0.35	0.55	0.30	38 or 30 cont	15 or 13 + 2.5[h]	5/13 or 5/10 cont	19	10/15	10	10/15
5	0.35	0.55	NR	38 or 30 cont	19[e] or 13 + 5[h] or 15 + 3[h]	13/17 or 13/12.5 cont	30[g]	10/15	10	10/19

NO SCALE

TABLE N1102.1 CLIMATE ZONES 3-5

a. R-VALUES ARE MINIMUMS. U-FACTORS AND SHGC ARE MAXIMUMS. WHEN INSULATION IS INSTALLED IN A CAVITY WHICH IS LESS THAN THE LABEL OR DESIGN THICKNESS OF THE INSULATION, THE INSTALLED R-VALUE OF THE INSULATION SHALL NOT BE LESS THAN THE R-VALUE SPECIFIED IN THE TABLE.

b. THE FENESTRATION U-FACTOR COLUMN EXCLUDED SKYLIGHTS. THE SOLAR HEAT GAIN COEFFICIENT (SHGC) COLUMN APPLIES TO ALL GLAZED FENESTRATION.

c. "10/15" MEANS R-10 CONTINUOUS INSULATED SHEATHING ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-15 CAVITY INSULATION AT THE INTERIOR OF THE BASEMENT WALL OR CRAWL SPACE WALL.

d. FOR MONOLITHIC SLABS, INSULATION SHALL BE APPLIED FROM THE INSPECTION GAP DOWNWARD TO THE BOTTOM OF THE FOOTING OR A MAXIMUM OF 24" BELOW GRADE, WHICHEVER IS LESS. FOR FLOATING SLABS, INSULATION SHALL BE PLACED FROM THE TOP OF THE FOOTING TO THE BOTTOM OF THE FOUNDATION WALL OR 24", WHICHEVER IS LESS. R-5 SHALL BE ADDED TO THE REQUIRED SLAB EDGE R-VALUES FOR HEATED SLABS.

e. DELETED

f. BASEMENT WALL INSULATION IS NOT REQUIRED IN WARM-HUMID LOCATIONS AS DEFINED BY FIGURE N1101.7 AND TABLE N1101.7.

g. OR INSULATION SUFFICIENT TO FILL THE FRAMING CAVITY, R-19 MINIMUM.

h. THE FIRST VALUE IS CAVITY INSULATION, THE SECOND VALUE IS CONTINUOUS INSULATION, SO "13+5" MEANS R-13 CAVITY INSULATION PLUS R-5 INSULATED SHEATHING. "15+3" MEANS R-15 CAVITY INSULATION, PLUS R-3 INSULATED SHEATHING. IF STRUCTURAL SHEATHING COVERS 25% OR LESS OF THE EXTERIOR, INSULATING SHEATHING IS NOT REQUIRED. WHERE THE STRUCTURAL SHEATHING IS USED, IF STRUCTURAL SHEATHING COVERS MORE THAN 25 PERCENT OF THE EXTERIOR, SHALL BE SUPPLEMENTED WITH INSULATED SHEATHING OF AT LEAST R-2. "13 + 2.5" MEANS R-13 CAVITY INSULATION PLUS R-2.5 SHEATHING.

i. FOR MASS WALLS, THE SECOND R-VALUE APPLIES WHEN MORE THAN HALF THE INSULATION IS ON THE INTERIOR MASS WALL.

j. IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3, A MAXIMUM OF TWO GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A U-FACTOR NO GREATER THAN 0.55 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.

k. IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3, A MAXIMUM OF TWO GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A SHGC NO GREATER THAN 0.70 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.

l. R-30 SHALL BE DEEMED TO SATISFY THE CEILING INSULATION REQUIREMENT WHEREVER THE FULL HEIGHT OF UNCOMPRESSED R-30 INSULATION EXTENDS OVER THE WALL TOP PLATE AT THE EAVES. WHERE R-38 INSULATION IS REQUIRED, WHERE ADEQUATE CLEARANCE EXISTS, OR INSULATION MUST EXTEND TO ENSURE THE INSULATION DEPTH OF AT LEAST 1 INCH AT THE EAVE ADJACENT TO THE EXTERIOR WALL.

m. TABLE VALUE REQUIRES CEILING INSULATION TO BE INSTALLED ON TOP OF THE ROOF. THERE THE INSULATION MUST FILL THE SPACE UP TO THE AIR BAFFLE.

n. R-19 FIBERGLASS BATTS COMPRESSED AND INSTALLED IN A NOMINAL 2 x 6 FRAMING CAVITY IS DEEMED TO COMPLY. FIBERGLASS BATTS RATED R-19 OR HIGHER COMPRESSED AND INSTALLED IN A 2x6 WALL IS NOT DEEMED TO COMPLY.

o. BASEMENT WALL MEETING THE MINIMUM MASS WALL SPECIFIC HEAT CONTENT REQUIREMENT MAY USE THE MASS WALL R-VALUE AS THE MINIMUM REQUIREMENT.

DRAWING INDEX

Residential Designer will not be responsible for structure. Details & Notes are provided for reference only. Consult with a licensed structural engineer to verify all construction details, footing sizes, point loads, joist size and direction, etc. Plans shall be reviewed and approved by Builder and/or homeowner before construction begins. Residential designer has made every attempt to address code to the best of their ability but will not accept any liability related to code compliance, etc.

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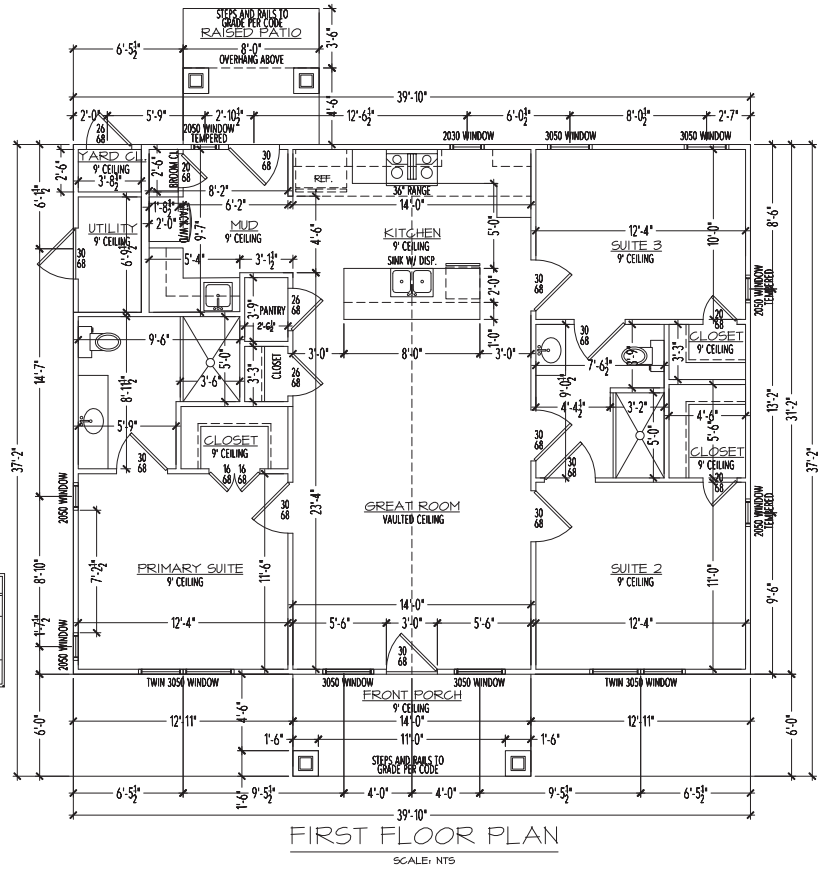
CODE NO.
JOB NO. 2023-48
DRAWN BY: MW
CHECKED BY: CAD

REVISIONS

DATE: 8.4.23

SHEET NO. 1.0



FIRST FLOOR PLAN

SCALE: NTS

SQUARE FOOTAGE BLOCK	
FIRST FLOOR	1,198 SQ. FT.
TOTAL HEATED	1,198 SQ. FT.
FRONT PORCH	84 SQ. FT.
UTILITY/YARD	40 SQ. FT.
COVERED PATIO	36 SQ. FT.
TOTAL UNDER ROOF	1,358 SQ. FT.
PATIO	28 SQ. FT.

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JOB NO. 2023-48
DRAWN BY: MWH
CHECKED BY: CAD
REVISIONS
DATE: 8.4.23

SHEET NO.
2.0

ELEVATION NOTES

1. GRADE ELEVATIONS SHOWN DO NOT NECESSARILY REFER TO THIS OR ANY OTHER LOT. THEY ARE FOR DIAGRAMMATIC PURPOSES ONLY AND MAY VARY. BUILDER IS RESPONSIBLE FOR ADAPTING THIS PLAN TO SUIT THE EXISTING TOPOGRAPHY OF THE SITE.
2. WINDOW GRILLS SHOWN ARE TO SCHEMATICALLY EXPRESS DESIGN INTENT. ACTUAL STD. GRILLS MAY VARY PER MANUFACTURER OR CUSTOM GRILLS MAY BE REQUIRED. ANY VARIATIONS FROM THAT SHOWN MUST BE APPROVED BY BUILDER.
3. ROOF VENTILATION TO BE DETERMINED BY BUILDER AS PER CODE DOWNSPOUTS NOT SHOWN FOR CLARITY.
4. CONTRACTOR TO VERIFY LOCATIONS W/ OWNER
5. ALL CONSTRUCTION TO COMPLY WITH WITH NCRC 2018 RESIDENTIAL CODE

Residential Designer will not be responsible for human error after construction begins and assumes no liability of the Residential Designer.
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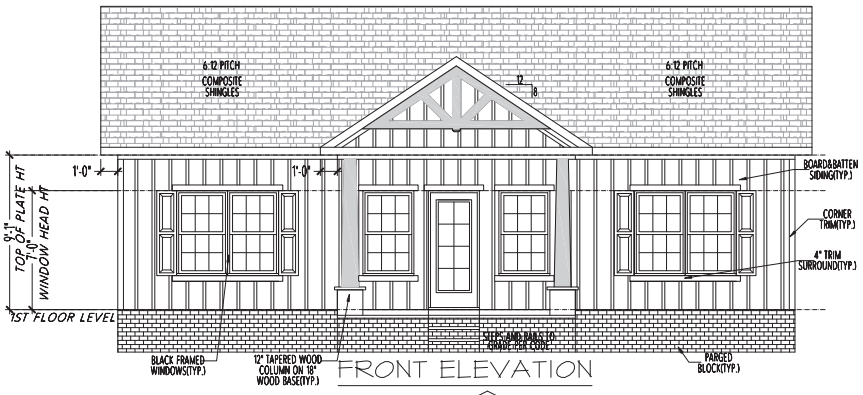
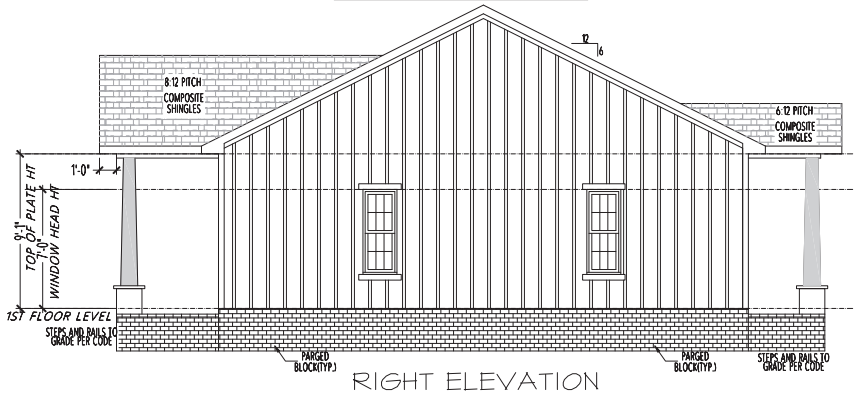
THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR THE CORRECT INSTALLATION OF ALL EXTERIOR FINISHES AND WEATHERPROOFING.



FRONT ELEVATION



RIGHT ELEVATION

SCALE: NTS

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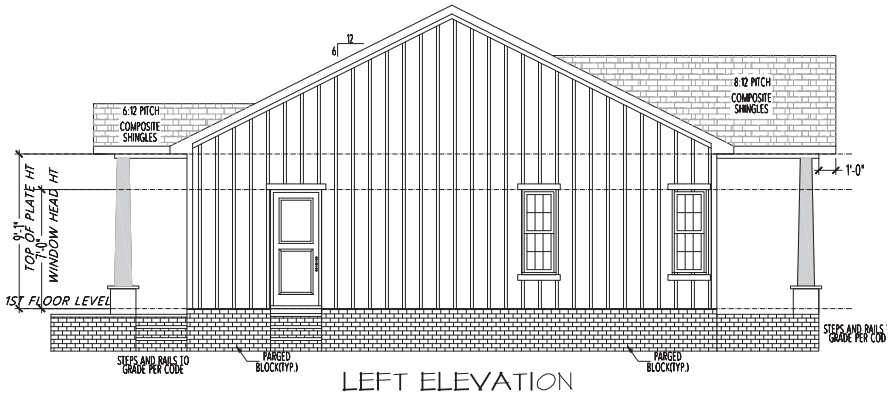
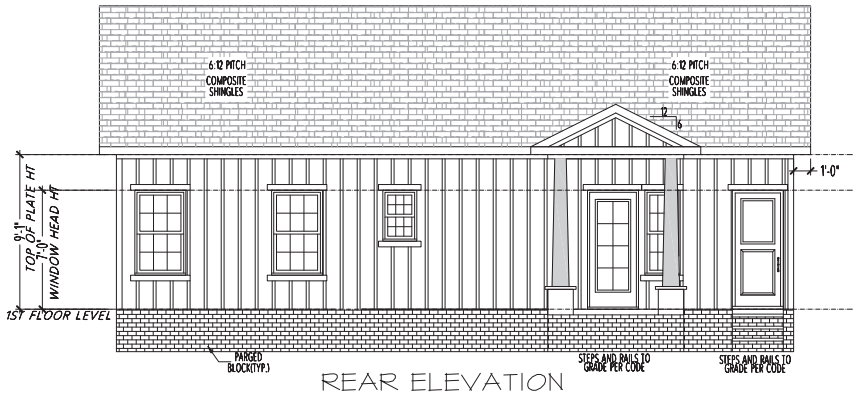
3.0



LEFT ELEVATION



REAR ELEVATION

SCALE: NTS

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JOB NO.	2023-48
DRAWN BY:	MWH
CHECKED BY:	CAD

REVISIONS:

DATE: 8.4.23

SHEET NO.
4.0

1. DESIGN LOADS:

1.1 Design loads are all dead loads plus:

- A. Main floor live loads (kitchen level) .... 40 PSF
- B. All other floors .... 40 PSF
- C. Balconies .... 60 PSF
- D. Decks .... 50 PSF
- E. Suspended Garages .... 50 PSF
  and 2000 Pound Point Load at any Location
- F. Attic floor live loading with the following:
  - i. Areas accessible by permanent stairs .... 30 PSF
  - ii. With Storage .... 20 PSF
  - iii. Without Storage .... 10 PSF
- G. Roof live load .... 20 PSF
- H. Wind load .... 115 MPH (3 Second Gust)
- I. Conforms with Seismic Design Criteria for Zone C.
- J. Snow load .... 20 PSF

1.2 All designs are in accordance with the 2018 North Carolina Residential Building Code, designed using ASD 2301.2.1 for all wood and steel structural elements and LRFD 2301.2.2 for all concrete structural elements..

2. FOOTINGS AND FOUNDATIONS:

2.1 Soil bearing capacity assumed as 2000 PSF unless noted otherwise or as determined by standard penetrometer test.

2.2 All continuous wall footings for one or two-story houses are 10" thick x 20" wide. Reinforcing in footings should be two (2) #4 bars if not noted on the plans. Reinforcement not required by Code, unless footings are on disturbed soil or compacted fill.

2.3 All interior piers are 8"x16" CMU up to a maximum height of 32". All piers over 32" high must be filled with Type S mortar. Maximum height for 8"x16" filled pier is 6'-4". Piers larger than 8"x16" are noted on the plans or as required by height. Pier cap blocks should be 8" of solid masonry.

2.4 Footings for 8"x16" piers are 20"x30"x10" unless noted otherwise. Reinforcing to be as noted on plans.

2.5 Concrete shall have a compressive strength of 3000 PSI in 28 days unless noted otherwise. No concrete shall be poured in temperatures below 40° Fahrenheit unless heat to be provided during curing for two days. The bottom of all footings must be a minimum of 12" below grade.

2.6 All rebar splices shall be a minimum of 2'-0" unless otherwise noted.

2.7 Any special foundations for structures shall be designed by a Licensed Professional Engineer upon receiving soil capacity specifications for all soil considered to affect the structure.

2.8 Chimney footing sizes are shown on the structural design drawings. Masonry or Isokern style chimney footings must be a minimum of 12" thick with 12" projection on all sides.

2.9 Foundation walls back-filled with soil and supporting structural framing shall be constructed as shown on detail sheet.

2.10 Special retaining wall designs to be shown on detail sheet.

NOTE: ALL POINT LOADS FROM ROOF BRACES, JACK STUDS, AND BEAM SUPPORTS - WHETHER WOOD OR STEEL - CANNOT BEAR ON SHEATHNG ALONE. BLOCKING EQUAL TO OR BETTER THAN THE SPECIFIED STUDS OR COLUMN PROVIDED FOR POINT LOAD SUPPORT MUST BE CARRIED THROUGH ALL CONSTRUCTION TO THE FOUNDATION.

3. FRAMING CONSTRUCTION - OTHER THAN ROOF:

3.1 Crawlspace girders and band as noted on plans. Maximum clear span to be 4'-8" (6'-0" o/c spacing of piers) unless noted otherwise.

To avoid most cracking in finished hardwood floors over any girders, use the following procedure:

A. Nailing Patterns

- i. All floor joists must be toe-nailed to their support girders with a minimum of 3-8d nails at each end from each side. Larger nails will split and render the toe-nail ineffective. No end-nailing through the girder or band is permitted except for temporary construction purposes.
- ii. If dropped girders are used, end-lap all joists 12" minimum and side-nail each with a minimum of 3-16d nails at each end of each joist. Ledger strips should be nailed with 3-16d nails at each joist end, with nails spaced 3" apart.
- iii. Nail multiple-member built-up girders with three rows of 16d nails staggered at 32" o/c, 2" down from the top, 2" up from the bottom, and at mid-depth. Use 3-16d nails at each end of each piece in the joints through the members making up the multiple-girder. This nailing pattern will insure a tight floor from outside of house to outside so that when the framing shrinks during the first heating season, the shrinkage will be uniformly distributed over the entire floor.
  If the girder nailing pattern is omitted, then the shrinkage will accumulate over the girders and an objectionable crack will develop in the finished hardwood floor over the girder line.

B. At all girders where the joists change direction, install bridging at 6" o/c for a minimum of six joist spacings beyond any joist direction change. This will insure shrinkage distribution over the floor and not let it accumulate at the girder.

C. There must be wood blocking through-bolted to the steel beam with joist toe-nailed and attached to the beam with metal hangers under any hardwood floors that pass over a steel beam supporting floor joists.

3. FRAMING CONSTRUCTION - OTHER THAN ROOF (CONTINUED):

3.2 All framing lumber must be Spruce Pine Fir #2 unless noted otherwise.

3.3 Steel beams must have 5-2x4 jack studs under each end support unless noted otherwise on the structural plans. All studs must be nailed together with two (2) vertical rows of 16d nails at 8" o/c, unless noted otherwise.

3.4 LVL beams must have 3-2x4 jack studs under each end support unless noted otherwise on the structural plans. All studs must be nailed together with two (2) vertical rows of 16d nails at 8" o/c, unless noted otherwise.

3.5 Masonry lintels:

- A. For spans up to 6 ft: Use 3½"x3½"x¼" steel angles.
- B. For spans from 6 ft to 10 ft: Use 5"x3½"x5/16" steel angles.
- C. For spans from 9 ft to 18 ft: Use a pair of 9 gauge wires in each of the first 3 courses of brick on a 5"x3½"x5/16" steel angle. Lap all 9 gauge wire splices 12" minimum and extend wires 12" minimum into jambs. Temporarily support steel angle before laying masonry. Shoring may be removed seven days following the installation of masonry.
- D. When structural steel beams with bottom plates are used to support masonry, the bottom plate must extend the full length of the steel beam. This provides support to the ends of the plate by bearing on the adjacent masonry jambs. The beam should be temporarily shored prior to laying the masonry. The shoring may be removed five days after laying the masonry.

3.6 All masonry or stone veneer over lower roofs must have a structural steel angle lag bolted to the adjacent wall studs to prevent sliding of the veneer. A minimum of a triple rafter must be installed below masonry climbs. Thin-set veneer attachments provided by the contractor may supercede this specification. Please verify the alternative attachment procedure with the Engineer of Record.

3.7 All rafter braces must have 2 studs from the wall top plate through all floors solid to the foundation or supporting beam below. No braces shall be attached to the top wall plate without studs directly under them.

3.8 Where non-bearing parallel partitions fall between floor joists, 2x4 ladders @ 16" o/c must be placed perpendicular to the joists to support the plywood decking or double joist installed directly below wall.

3.9 All wood I-joists must be braced in accordance with the manufacturer's directions plus any details shown on the plans. Load bearing partitions, jacks, beams and column supports must be solidly blocked through the floor as the joists and plywood may not be able to carry the concentrated point loads. All point loads must be carried to the foundations with blocking and/or beams. **(NOTE: All beams and double joists, etc., have been shown for a load bearing purpose. Placement of the load carrying members shown in the plans in locations other than under the structural element they are intended to carry is the responsibility of the contractor. Exact beam locations are not to be scaled from the framing plans.)**

3.10 All two-story open rooms with full height openings must be braced to resist pressure resulting from 115 MPH design fastest-mile wind speed or as prescribed for specified wind zones per ASCE 7-98. Any special wall reinforcing shall be shown on the plans provided. Two-story open rooms must be balloon-framed with 2x6s @ 16" o/c as a minimum (no exceptions.)

3.11 Stud walls to be listed below unless otherwise noted on the structural plans:

- A. Interior One & Two Story Walls (with intermediate floors)
  - i. Load bearing .... 2x4 @ 16" o/c
  - ii. Non load bearing .... 2x4 @ 16" o/c
- B. Interior Three Story Walls
  - i. Load bearing (2nd & 3rd Floor) .... 2x4 @ 16" o/c
  - ii. Load bearing (1st Floor) .... 2x4 @ 12" o/c or 2x6 @ 16" o/c
  - iii. Non-load bearing .... 2x4 @ 16" o/c
- C. Basement Walls
  - i. Load bearing .... 2x4 @ 12" o/c
  - ii. Non-load bearing .... 2x4 @ 16" o/c
- D. Exterior Walls
  Exterior walls for three stories shall be 2x6 @ 16" o/c with ½"x4'x8' OSB sheathing or C-DX plywood over entire exterior.

3.12 Headers shall be as shown on the plans.

3.13 When ceiling joists are parallel to an exterior wall and rafters bear on the exterior stud wall's top plate, tie the rafters near the top plate to the ceiling joists with 6' long 2x6 runners at 4' o/c across the top of the ceiling joists.

3.14 At all bay windows, each panel shall be nailed to each adjacent panel with 5-16d nails tied together with metal strapping nailed at four locations between floors with a minimum of 2-16d nails in each panel at each strap. This will help prevent vertical cracking in the panel joints due to horizontal oscillation of the panels.

3.15 At all stairs, every stud at each stringer must be nailed to each stringer with a minimum of 2-16d nails. This will help prevent cracking between the wallboard and the top of the base molding due to vertical oscillation of the stair stringers.

3.16 Steel pipe columns must be in contact with the supported member and continue solid to the supporting masonry or concrete foundation. No intermediate wood blocking should be used as it will crush. Pipe columns are to be welded to the bottom flange of all steel beams with a continuous fillet weld. Steel plates should be welded to the top of pipe columns with two holes to allow for a minimum of two 3/8" diameter lag screws into all wood beams.

4. FOUNDATION WALLS

4.1 All full height foundation walls are shown on structural detail sheet.

4.2 All masonry or concrete basement wall construction must be inspected by the County Building Official, Architect, or Engineer for compliance with structural specifications.

4.3 Where full-height foundation or basement walls run parallel to floor framing, blocking must be provided between joists at 3'-0" o/c for not less than six joist spacings out from wall.

4.4 Details of any earth retaining structures not attached to the house structure will be shown on separate details. (These walls may be designed only after grade conditions are known.)

5. ROOF CONSTRUCTION

5.1 Rafters shall be 2x6 SPF #2 @ 16" o/c for standard weight shingles except as noted. They are to be cut into hips, ridges, etc., unless noted as over-built.

5.2 Collar ties shall be 2x6 @ 48" o/c at all ridges unless noted otherwise and located a minimum 3' below the ridge. Collar ties may be closer to ridge if alternate bracing provided. Vaulted ceilings require special collar tie details or structural ridge beam. See plans as required.

5.3 A minimum of three collar ties shall be used at all ridges even if two ties must be put on one set of rafters.

5.4 All hips and ridges are a size larger than the rafters framing into them unless noted otherwise.

5.5 All hogs on ceiling joists or rafters are 8' long 2-2x6 hog troughs unless noted otherwise. Rafters may be spliced over hogs.

5.6 Gable end framing must be braced parallel to ridges with a minimum of 2x6 diagonal braces @ 6' o/c along the gable wall to the interior ceiling joists. Braces are to bear on 2-2x6 hogs and to gable wall at approximately mid-height of gable wall. Braces shall be at approximately a 45° angle. Other bracing may be used if it meets the Engineer's approval.

5.7 Carry braces to partitions or beams below. Never brace rafter hogs to 2-2x6 hogs on ceiling joists, unless shown on plans.

5.8 Ceiling joists when erected parallel to rafters must be sistered to rafters and nailed with 3-16d nails at each rafter. If a kneewall is used and ceiling joists cannot touch rafters, then rafters must be braced to the ceiling joists with 2x4 diagonal rafter ties spaced @ 48" o/c. Reverse collar ties may be used behind kneewalls.

5.9 Roof Plan Legend:

- A. ⊗ or ○ Indicates location of roof brace at rafter level.
- B. ⊗→ Arrow away from brace point indicates direction of roof brace to partition, beam or other brace point below.
- C. ⊗← Arrow into brace point indicates a vertical or almost vertical roof brace to partition, beam or other brace point below.
- D. All roof braces are 2-2x4 "T" nailed with 16d nails @ 9" o/c vertically from top to bottom. All braces longer than 10' must be braced horizontally in two directions at mid-height or be increased to 2-2x6s.
- E. Maximum spacing of roof braces is to be as follows:
  - i. For 2-2x6 hog .... 6'-0" o/c
  - ii. For 2-2x8 hog .... 7'-6" o/c

6. WALL BRACING PER R 602.10

This structure has been analyzed by the professional engineer of record for lateral loading. It has been designed using continuous ½" OSB sheathing fastened to the exterior wall framing with 8d nails at 6" on center on edge and 12" on center in the field, to meet and exceed the intent of The 2018 North Carolina Residential Building Code. Where braced wall lines require additional reinforcing, engineered walls sections and hold downs have been provided.

All 800# hold downs are to be Simpson LSTA15 or MSTA15 vertical straps fastened to a minimum of a two stud pocket and the floor band.

EMF- Engineered Moment Frame

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 32138

STRUCTURAL ENGINEER:
SUSTAINABLE ENGINEERING & EFFICIENT DESIGNS, PLLC.
2445 GREENLAND AVE.
CHARLOTTE, NC 28208

CORPORATE LICENSE NO. P-0846

SEAL FOR STRUCTURE ONLY

BUILDER:
STAY, LLC

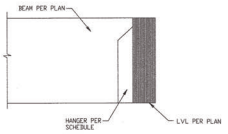
PROJECT NAME AND ADDRESS:
COBLE RESIDENCE
2405 KENDRICK DRIVE
CHARLOTTE, NC 28214

SEED
SUSTAINABLE ENGINEERING & EFFICIENT DESIGNS, PLLC.

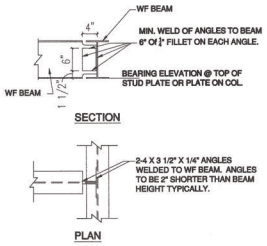
DRAWING TITLE:
GENERAL NOTES

DATE:
SEPT. 6, 2023

SHEET NO.
SGN

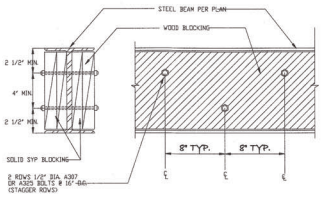


1 SD1 **BEAM TO LVL CONNECTION DETAIL** SCALE= NTS



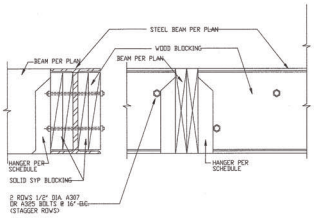
2 SD1 **STEEL TO STEEL CONNECTION DETAIL** SCALE= NTS

N/A



3 SD1 **STEEL BEAM WEB BLOCKING DETAIL** SCALE= NTS

N/A

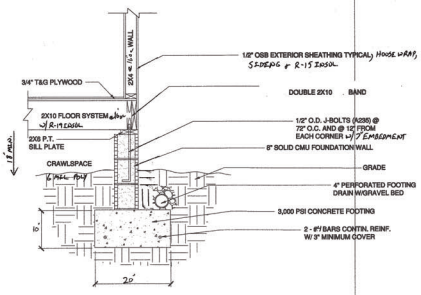


4 SD1 **BEAM TO STEEL BEAM CONNECTION DETAIL** SCALE= NTS

N/A

TYPICAL HANGERS FOR JOISTS AND BEAMS	
MEMBER	HANGER
2X8	LUS28
2X10	LUS210
2X12	LUS210
2-2X8	HUS28-2
2-2X10	HUS210-2
2-2X12	HUS212-2
3-2X8	LUS28-3
3-2X10	LUS210-3
3-2X12	HUS212-3 MIN
3-1 3/4" x 9 1/4" LVL	HGUS412
3-1 3/4" x 11 7/8" LVL	HGUS412
3-1 3/4" x 14" LVL	HGUS414
3-1 3/4" x 16" LVL	HGUS414
3-1 3/4" x 18" LVL	HGUS414
3-1 3/4" x 9 1/4" LVL	HGUS5.50/10
3-1 3/4" x 9 1/4" LVL	HGUS5.50/12
3-1 3/4" x 11 7/8" LVL	HGUS5.50/12
3-1 3/4" x 14" LVL	HGUS5.50/14
3-1 3/4" x 16" LVL	HGUS5.50/14
3-1 3/4" x 18" LVL	HGUS5.50/14
4-1 3/4" x 9 1/4" LVL	HGUS7.25/10
4-1 3/4" x 11 7/8" LVL	HGUS7.25/12
4-1 3/4" x 14" LVL	HGUS7.25/14
4-1 3/4" x 16" LVL	HGUS7.25/14
4-1 3/4" x 18" LVL	HGUS7.25/14

5 SD1 **HANGER SCHEDULE** SCALE= NTS



6 SD1 **CRAWLSPACE FOUNDATION DETAIL** SCALE= NTS

STRUCTURAL ENGINEER
SUSTAINABLE ENGINEERING & EFFICIENT DESIGNS, PLLC
2405 KENDRICK DRIVE
CHARLOTTE, NC 28214
SEAL FOR STRUCTURE ONLY

BUILDER:
STYX, LLC

PROJECT NAME AND ADDRESS:
COBLE RESIDENCE
2405 KENDRICK DRIVE
CHARLOTTE, NC 28214

SEED
SUSTAINABLE ENGINEERING & EFFICIENT DESIGNS, PLLC.

DRAWING TITLE:
STANDARD DETAILS

DATE:
SEPT. 6, 2023

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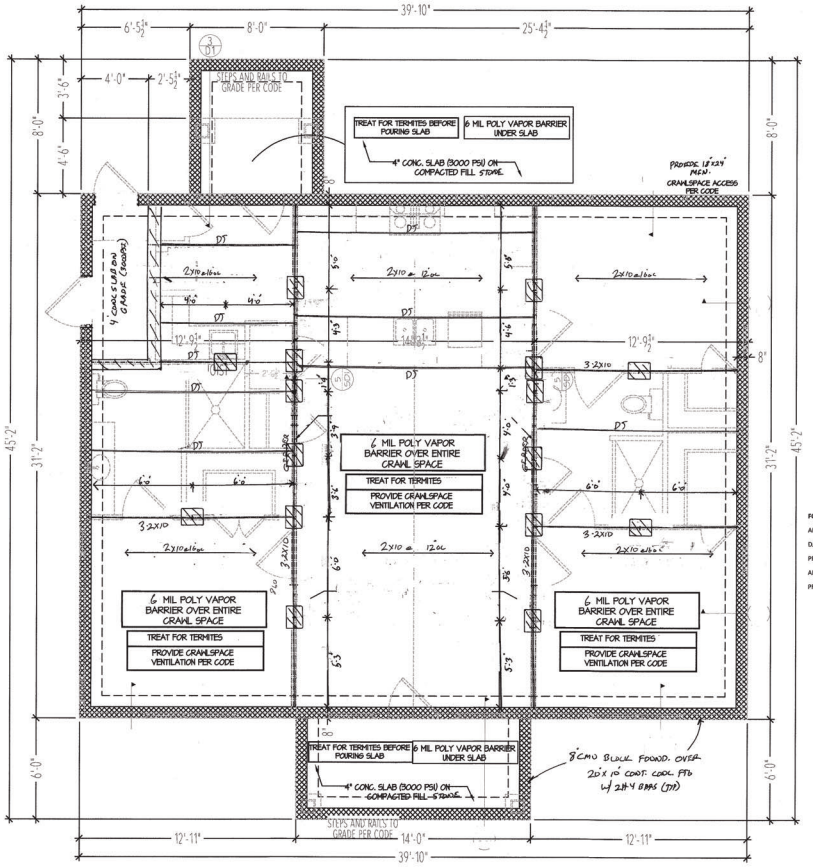
SD1



CRAWLSPACE FOUNDATION

SCALE: NTS

Sustainable Engineering & Efficient Designs, PLLC
3445 Greenland Avenue
Charlotte, NC 28206
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FOUNDATION NOTES:

ALL FIRST FLOOR FRAMING IS 2X10 @ 16" OC uno

DJ = DOUBLE JOIST

PROVIDE SOLID WOOD UNDER ALL POINT LOADS uno

ALL HAND DRAWN DIMENSIONS ARE SCALED AND ROUNDED TO THE NEAREST ½ FOOT uno

PROVIDE TERMITE TREATMENT AND 6 MIL POLY VAPOR BARRIER UNDER ALL SLABS uno

FOUNDATION KEY

▨ – 8"x16"CMU BLOCK OVER 24"x36"x10" CONC. FTG

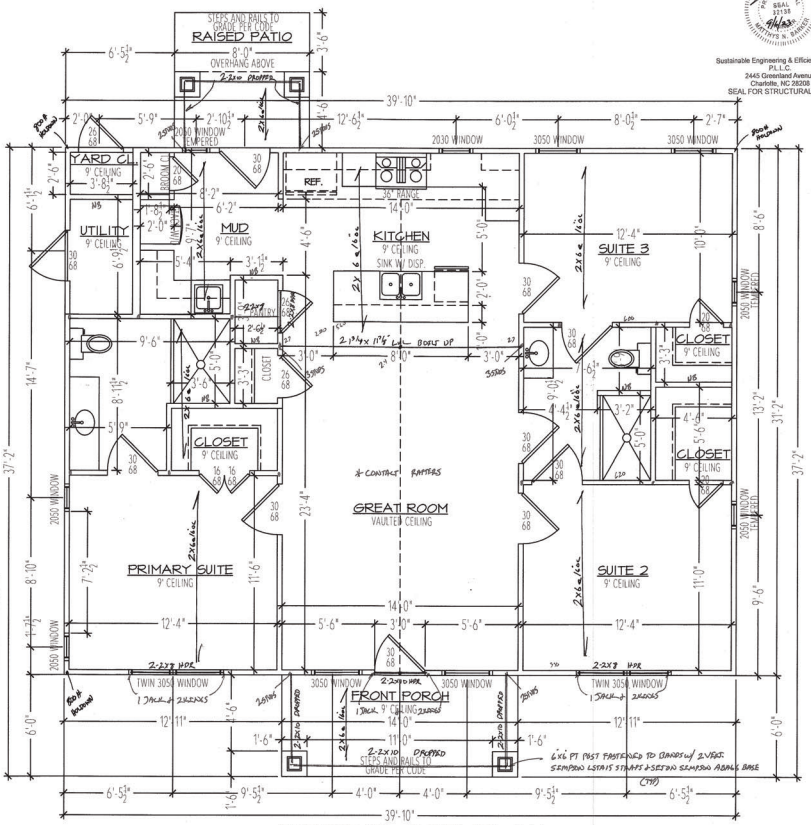
MEMBER AIBD
AMERICAN INSTITUTE of BUILDING DESIGN

DESIGNTIME RESIDENTIAL
Charlotte, North Carolina 704-877-3640
www.dthomeplans.com

STAY, LLC
COBLE RESIDENCE
2405 KENDRICK DRIVE
CHARLOTTE, NC 28214

CONST. NO.	
JOB NO.	2023-48
DRAWN BY:	MWH
CHECKED BY:	CAD
REVISIONS:	
DATE:	8.4.23

SHEET NO.
S1



FIRST FLOOR PLAN

SCALE: NTS

FIRST FLOOR NOTES:

ALL ATTIC FRAMING IS 2X6 @ 16" OC uno

ALL FIRST FLOOR HEADERS ARE 2-2X8 WITH 1 JACK & 1 KING STUD uno

PROVIDE 2 STUDS UNDER ALL ROOF BRACES uno

FURR DOWN CONTACT RAFTERS FOR INSULATION uno

FASTEN CONTACT RAFTERS TO EXTERIOR WALL TOP PLATES WITH SIMPSON H2.5A HURRICANE STRAPS @ 16" OC

WALL BRACING PROVIDED BY CONT. ½" OSB SHEATHING FASTENED WITH 8D NAILS @ 6" OC ON EDGE & 12" OC IN THE FIELD TO MEET & EXCEED THE INTENT OF SECTION R602.10, ENGINEERED DESIGN uno

NB = NON-BEARING

SQUARE FOOTAGE BLOCK	
FIRST FLOOR	1,198 SQ. FT.
TOTAL HEATED	1,198 SQ. FT.
FRONT PORCH	84 SQ. FT.
UTILITY/YARD	40 SQ. FT.
COVERED PATIO	36 SQ. FT.
TOTAL UNDER ROOF	1,358 SQ. FT.
PATIO	28 SQ. FT.

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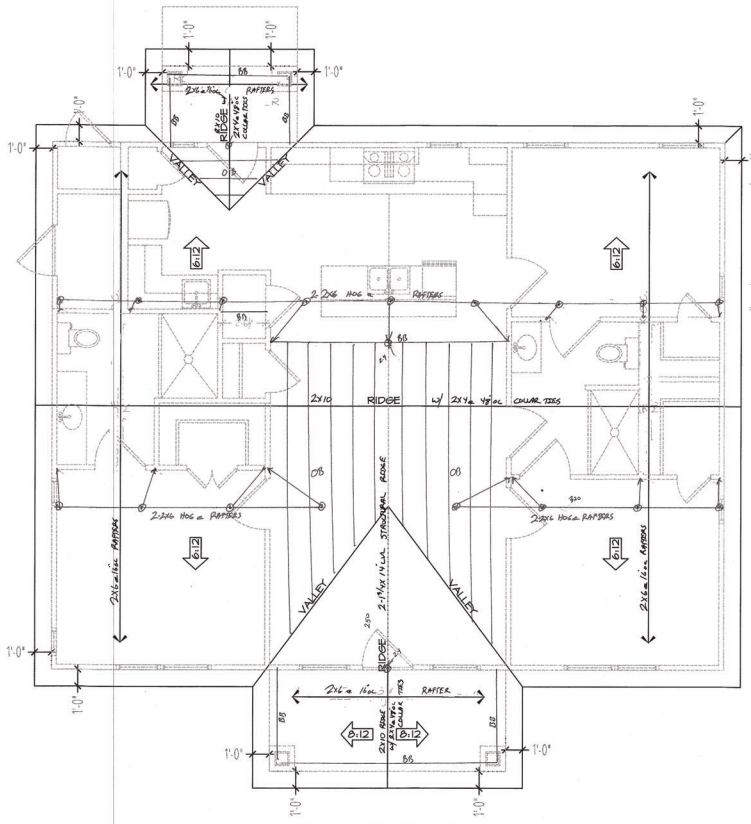
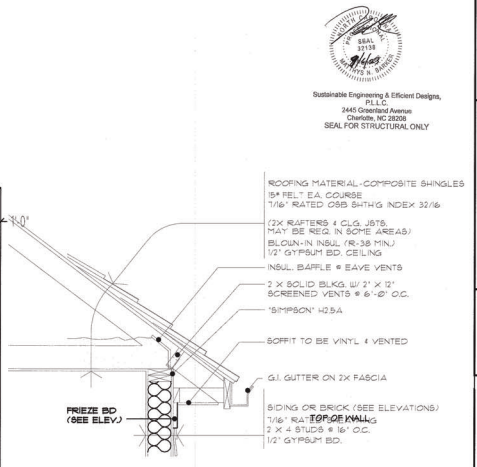
REVISIONS:
DATE: 8.4.23

SHEET NO. S2





ROOF NOTES:

ALL RAFTERS ARE 2X6 @ 16" OC uno

ALL RIDGES ARE 2X10 WITH 2X4 @ 48" OC COLLAR TIES uno

ALL HIPS AND VALLEYS ARE 2X10 uno

BB = BEAM BELOW

RB = RAFTERS BEAR

OB = OVERBUILD

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Charlotte - North Carolina 704-877-1654
www.dthomeplans.com

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S3